Statement of Volatility – Dell E6230/E6330/E6430/E6430ATG/E6530

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

The Dell Latitude™ E6230/E6330/E6430/E6430ATG/E6530 contains both volatile and non-volatile (NV) components. Volatile components lose their data immediately after power is removed from the component. Non-volatile (NV) components continue to retain their data even after power is removed from the component. The following NV components are present on the Dell Latitude™ E6230/E6330/E6430/E6430ATG/E6530 system board.

Table 1. List of Non-Volatile Components on System Board

Description	Reference Designator	Volatility Description	User Accessible for external data	Remedial Action (Action necessary to prevent loss of data)
Embedded Flash in embedded controller MEC5055	U51	256K and 2K byte of embedded Flash memory for embedded controller BIOS code, asset tag, and BIOS passwords.	No	N/A
Panel EEDID EEPROM	Part of LCD panel assembly	Non-volatile memory 64K bytes. Stores panel manufacturing information and display configuration data.	No	N/A
System BIOS	U52,U53	Non-volatile memory, 64Mbit (8 MB), 32Mbit (4 MB) System BIOS and Video BIOS for basic boot operation, PSA (on board diags), PXE diags.	No	N/A
System Memory – DDR3 memory	Connectors JDIMMA and JDIMMB	Volatile memory in OFF state (see state definitions later in text). One or both modules will be populated. System memory size will depend on SoDIMM modules and will be between 1 GB to 8 GB.	Yes	Power off system
System memory SPD EEPROM	On memory SoDIMM(s) – one or two present	Non-volatile memory 2Kbit (256 bytes). One device present on each SoDIMM. Stores memory manufacturer data and timing information for correct operation of system memory.	No	N/A

Description	Reference Designator	Volatility Description	User Accessible for external data	Remedial Action (Action necessary to prevent loss of data)
RTC CMOS	UH4	Non-volatile memory 256 bytes. Stores CMOS information.	No	Remove the on-board coin-cell battery.
Video memory – type – see next column	UMA architecture uses system DDR3. Discrete graphics systems use gDDR5 (UV3-UV6) for frame buffer.	Volatile memory in off state. 1 GB gDDR5 for discrete graphics systems. UMA uses main system memory size allocated out of main memory.	No	Enter S3-S5 state below.
Security Controller Serial Flash Memory	U4 (up-sell USH daughter board)	Non Volatile memory, 16 Mbit (2Mbyte).	No	N/A
Security Controller	U2 (up-sell USH daughter board)	128K byte ROM, 128K bit one-time programmable.	No	N/A
TPM Controller	U39	Non Volatile memory, 2K bits (256 bytes) ROM.	NA	NA
Hard drive	User replaceable	Non-volatile magnetic media, various sizes in GB.	Yes	Low-level format
CD-ROM/RW/ DVD/ DVD+RW/ Diskette Drives	User replaceable	Non-volatile optical/magnetic media.	Yes	Low-level format/erase

CAUTION: All other components on the system board lose data if power is removed from the system. Primary power loss (unplugging the power cord and removing the battery) destroys all user data on the memory (DDR3, 1333/1600 MHz). Secondary power loss (removing the on-board coin-cell battery) destroys system data on the system configuration and time-of-day information.

In addition, to clarify memory volatility and data retention in situations where the system is put in different ACPI power states, the following is provided (those ACPI power states are S0, S1, S3, S4, and S5):

S0 state is the working state where the dynamic RAM is maintained and is read/write by the processor.

S1 state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system contexts.

S3 is called "suspend to RAM" state or stand-by mode. In this state, the dynamic RAM is maintained. Dell systems will be able to go to S3 if the OS and the peripherals used in the system supports S3 state. Linux, Win 2K and Win XP support S3 state.

S4 is called "suspend to disk" state or "hibernate" mode. There is no power. In this state, the dynamic RAM is not maintained. If the system has been commanded to enter S4, the OS will write the system context to a non-volatile storage file and leave appropriate context markers. When the system is coming back to the working state, a restore file from the non-volatile storage can occur. The restore file has to be valid. Dell systems will be able to go to S4 if the OS and the peripherals support S4 state. Win 2K and Win XP support S4 state.

S5 is the “soft” off state. There is no power. The OS does not save any context to wake up the system. No data will remain in any component on the system board, i.e. cache or memory. The system will require a complete boot when awakened. Since S5 is the shut off state, coming out of S5 requires power on which clears all registers.

The following table shows all the states supported by Dell Latitude™ E6230/E6330/E6430/E6430ATG/E6530

Model Number	S0	S1	S3	S4	S5
Dell Latitude™ E6230	X		X	X	X
Dell Latitude™ E6330	X		X	X	X
Dell Latitude™ E6430	X		X	X	X
Dell Latitude™ E6530	X		X	X	X
Dell Latitude™ E6430 ATG	X		X	X	X